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Prematurity and Its Relationship to Maternal Health

NICHOLSON J. EASTMAN, M.D., Professor of Obstetrics, Johns Hopkins University

PART II. PREMATURE BIRTHS WITH NO DEMONSTRABLE OBSTETRIC CAUSE *

(Continued From Last Issue)

In reviewing the 50 percent or so of premature births in which no obstetrical cause is demonstrable, we are here embarking on an uncharted sea. Occasionally we shall find landmarks and will continually be asking ourselves what is the significance of this or that landmark; too often we shall be unable to answer the question definitely and can only speculate.

The woman who gives birth to a premature infant follows to a certain extent a definite pattern. There is some evidence to suggest that the incidence of prematurity is related to economic status. But this is difficult to prove and, even if proven, the question arises as to what specific factor in economic status is the one responsible for premature births. Is it poor diet? Is it overwork? Or, is it the whole ensemble of poor diet, poor living conditions, overwork, and poor hygiene?

In this connection, the first question is: Do women who give birth to premature infants repeat? Is there something in the patient's make-up, in her hygiene, in her diet, in her inheritance, that causes her to give

birth repeatedly to premature infants? The answer to this question is very much in the affirmative (Table 6).

Table 6 shows the incidence of one or more previous premature deliveries according to the weight of the last born infant in 5,125 women, all gravidae two or more; in all of them the last born infant died neonatally. The group in Chicago, to whom we are indebted for this study, were carrying out a postmortem investigation and accordingly, most of their data are on autopsy cases.

Of this group, 1,802 women had each recently given birth to a child that died neonatally and weighed more than 2,500 grams. Going into their past obstetrical history, how many of these women had had premature babies previously? One or more previous premature babies were reported in 8.2 percent; for mothers with a history of two or more previous deliveries, the figure was 2.2 percent.

By contrast, 3,323 women likewise had had a recent baby that died neonatally but, here, in each case it weighed less than 2,500 grams. These women were also asked about previous premature infants and it was found that no less than 20 percent of these women had a history of one or more additional premature deliveries in the past.

If the investigators went further and asked these mothers how many had a history of two or more premature deliveries, the figure was 4.9 percent. A study of the cases in which the last born baby was "immature," that is, weighed under 1,000 grams, shows further accentuation of this trend.

This indicates that women who have had one premature baby are likely to have another. There are other

TABLE 6

Incidence of One or More Previous Premature Deliveries, According to Weight of Last Born Infant in 5,125 Women, All Gravidae II or More and in All of Whom the Last Born Infant Died Neonatally †

Weight of last born child (neonatal death)	Number in each weight group	Percent of mothers with history of one or more previous premature deliveries	Percent of mothers with history of two or more previous premature deliveries
2,500 grams and over	1,802	8.2	2.2
Under 2,500 grams	3,323	20.5	4.9
Under 1,000 grams	1,083	24.4	5.8

† Compiled from Table 21 of Bundesen, Potter, Fishbein and Bauer, with their kind permission.

* Part I appeared in the issue of February 15th.

studies in this general field which support this contention. This is an important fact to know in any attempt to prevent premature birth because it is a warning, and if there is anything in the way of diet, rest, or hygiene that we can muster in the care of such a patient, she would seem to deserve that special attention.

Many pitfalls are encountered when probing into the causation of prematurity and one of these has to do with prematurity in the colored race. Because the definition of 2,500 grams seems to be satisfactory in the white, that does not necessarily mean it is satisfactory in the colored. Students of the subject seem to feel that a figure of 2,350 grams would be better for the colored and that fact must be kept in mind when evaluating our figures. The Chicago figures, Table 1,† show the incidence of prematurity in the white and in the nonwhite, based on the experience of almost a million births, namely, 6.5 percent in the white and 10.0 percent in the nonwhite. It is difficult to know how much of this differential is attributable to inherent racial characteristics. Colored babies at term weigh less than white babies; Chinese also have smaller babies; the Filipinos likewise have smaller babies; yet those babies, although smaller, may still be mature from the viewpoint of gestational age. When, however, gestational age is used in calculating such data other errors are introduced. Accordingly, it is best to beware of comparing any series of white patients with any series of colored patients in respect to the incidence of prematurity.

TABLE 7
Incidence of Prematurity per 1,000 Live Births by Race and Socio-economic Class in Chicago, 1950

(Based on 6,471 premature births in 70,657 total births)

Socio-economic class	Total	White	Colored	Other
I*	96.8	78.3	136.2	123.1
II	91.5	70.0	133.2	104.5
III	75.7	66.6	127.5	39.0
IV	71.4	69.8	100.2	†

* Represents lowest socio-economic class.
† Less than 100 cases, so rate not calculated.

Table 7 shows data which Dr. Bundesen and his associates have provided on the incidence of prematurity by race and socio-economic status. They apply to Chicago for the single year of 1950 and are based on 6,471 premature births in 70,657 total births. These figures suggest, but do not prove, that there is more prematurity in the lower economic brackets.

Table 8 shows the incidence of prematurity at the Johns Hopkins Hospital according to economic status and race (spontaneous onset of labor, single pregnancies only). In 4,270 private cases there were 234 premature births, an incidence of 5.5 percent. Now this is the figure we should strive for in all groups. If we could

† Published in February 15th issue.

TABLE 8
Incidence of Prematurity According to Economic Status and Race
Spontaneous Onset of Labor, Single Pregnancies Only
Johns Hopkins Hospital

Baby weight	Private Cases Percent	White clinic Cases Percent	Colored Cases Percent	Total Cases Percent
2,500 grams and over	4,036 94.5	12,222 92.3	13,250 86.5	29,508 88.9
1,000-2,499 grams	234 5.5	1,026 7.7	2,063 13.5	3,323 10.1
Total	4,270 100.0	13,248 100.0	15,313 100.0	32,831 100.0

reduce the incidence of premature births in all groups to 5.5 percent the saving of infant lives would soon reach astronomical figures. Why is it that these private patients have this low incidence? In white clinic patients the figure is 7.7 percent, which is a significantly higher incidence. As already stated it would be unwise to consider the colored group here because of the question of the definition of prematurity.

TABLE 9
Incidence of Prematurity According to Economic Status and Race in Cases Without Demonstrable Cause for Premature Birth, Spontaneous Onset of Labor, Single Pregnancies Only, With All Cases Complicated by Diseases Listed in Table 4 Eliminated
(June 1, 1936-December 31, 1949)

Baby weight	Private Cases Percent	White clinic Cases Percent	Colored Cases Percent
2,500 grams and over	3,782 95.3	6,031 92.9	5,415 88.3
1,000-2,499 grams	187 4.7	460 7.1	720 11.7
Total	3,979 100.0	6,491 100.0	6,135 100.0

Table 9 shows incidence of prematurity according to economic status and race in cases without demonstrable cause for premature birth, with spontaneous onset of labor, single pregnancies only and with all cases complicated by the diseases listed in Table 4 eliminated. These pregnancies, in other words, are presumably normal. Here we have 4.7, 7.1, and 11.7 percent, respectively—figures which are quite comparable to those in Table 9.

TABLE 10
Percentage Incidence of Prematurity of Weight Criterion by Socio-economic Class in Birmingham, England, 1947*
(Based on 2,190 premature births in 22,027 total births)

	Group I †	Group II	Group III
Cases	8,313	9,762	3,952
Prematures	897	917	376
Percent premature	10.8	9.4	9.5

* J. R. Gibson and T. McKeown, Brit. J. Soc. Med., 1951, 5:259.
† Lowest socio-economic class.

Table 10 is data from a study by Gibson and McKeown, Birmingham, England, 1947: 2,190 premature births in 22,000 total of births. They have grouped these 22,000 cases into three socio-economic classes and have attempted to investigate the very question we are discussing. The difference is suggestive but not especially convincing.

Table 11 shows the Birmingham data when arranged by gestational age. Again these data are not very satisfying, but the trend is in the same general direction.

Several British investigators feel that hard work, especially manual labor, is the cause of premature birth

in some of these unknown cases. In other words, when families get to a point where they can at least have a servant do the washing, or help with the heavy work

TABLE 11
Percentage Incidence of Prematurity on Criterion on Gestational Age in Birmingham, England,* 1947
(Based on 1,035 premature births in 16,677 births)

	Group I	Group II	Group III
Cases	6,346	7,269	3,062
Prematures	420	440	175
Percent premature	6.6	6.1	5.7

* J. R. Gibson and T. McKeown, Brit. J. Soc. Med., 1951, 5:259.

in the latter part of pregnancy, the outlook is better because it spares the woman this extra labor. Many students of the subject believe that dietary factors are at fault, but some would disagree. If socio-economic

circumstances play any part at all in the causation of premature births, they must exert these effects through some such factors as these.

To summarize our consideration of the prevention of prematurity, a considerable reduction in the frequency of premature birth can be effected (1) by providing more rest in bed in the last trimester of twin pregnancies; (2) by intensifying prenatal care in order to reduce the incidence of pre-eclampsia; and (3) by giving special instructions in respect to diet, hygiene, and rest to women who have had previous premature deliveries. In regard to the role of economic and social factors, this is a moot question but there is suggestive evidence that better diets and the elimination of heavy work would improve the picture.

Discussion of Paper: "Prematurity and Its Relationship to Maternal Health"

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It is with some trepidation that I open discussion on Dr. Eastman's presentation. For the fact of the matter is that my basic knowledge in this field was gained by four years on Dr. Eastman's resident service. So anything that I may possibly add to what he has already said will undoubtedly redound to his credit anyhow. On the other hand, perhaps he will have to be responsible for any "boners" I pull.

In considering the problem of the prevention of prematurity it is essential that we bear continually in mind the prime goal toward which we are working, namely, increased fetal salvage. Actually, there are two major problems involved: (1) the problem of the causes and prevention of premature delivery itself, (2) the problem of neonatal mortality associated with premature delivery. From a strictly obstetrical point of view there is a very definite difference between these two problems. For example, infants born of multiple pregnancies have a much better chance of survival than single infants of comparable weight or length or maturity. On the other hand, infants delivered to toxemic patients or patients with hydramnios have a considerably smaller chance of survival as compared to infants of comparable weight, length, or maturity whose mothers did not present these complications. I think it will be important to keep this distinction in mind as we study methods and programs which are available to us in the prevention of prematurity.

Obviously, our initial emphasis should be placed where there seems to be the greatest chance of doing the most good. Dr. Eastman has already mentioned one such example, those patients who have already had one or more premature deliveries. From the public health

point of view as well as from a general medical or obstetrical point of view it is clear that such patients should be followed more clearly in their obstetrical care than the average patient in the hope of preventing repetition of premature delivery. An example of this sort points up the fact that there is very little we can do to prevent prematurity or the mortality associated with it if the patients do not get to us in time or often enough. Dr. Eastman did not mention any figures on the relationship of prenatal care to the incidence of prematurity, although I quoted his older figures this morning. These are open to certain statistical objections, but he has some newer, more valid figures which I hope he will perhaps mention a little later. Although absolute proof is difficult to come by, I think we obstetricians are fairly well agreed that the incidence of prematurity can be lowered by adequate prenatal care. This brings us then to the problem of education for the prevention of prematurity.

First of all, education of the public. That is, of course, notably a public health function. And it is being increasingly undertaken by all of the public health facilities which are available. Much has already been done in the way of parents classes, mothers classes, parents conferences, nurses visits, and the like. But in obtaining adequate education of the public for the prevention of prematurity we also have the problem of going further back than simply the pregnant mother herself. We know, for example, that the incidence of prematurity is highest in the primipara—although the associated mortality is lower than for her multiparous sisters. Hence education of women on the values of prenatal care must start even before the first pregnancy.

In this connection we might refer to the work of Clement Smith already mentioned by Dr. Eastman, the work on nutrition. There is one other aspect of this work which I should like to emphasize. Clement Smith, in comparing his observations in Holland with those obtained by British workers in Wales, concluded that the correction of acute undernutrition did little if anything to improve the prematurity rate. This was the type of undernutrition which the Dutch suffered during war time occupation. He felt, on the other hand, that in Great Britain chronic extreme malnutrition in certain areas exerted a considerable influence on the prematurity rate. And it was his feeling that the prime emphasis on such things as nutritional supplements, nutritional aid, and nutritional education should be carried out in the terms of chronic malnutrition rather than that of acute undernutrition during pregnancy. Here again we see that education for the prevention of prematurity must, in all probability, begin far earlier in life than simply with the pregnant mother. In this connection Miss Hill has already spoken very sensibly about the question of nutritional education for the school child or the high school child, from the point of view of preparing women for pregnancy long before pregnancy is undertaken.

There is, however, a second educational aspect in preventing prematurity which has not been touched upon so far. That is the question of professional education—education of physicians. If we are to have the meticulous type of prenatal care which we desire with minute attention, for example, to the earliest possible signs of the eclamptogenic toxemias, we must keep physicians throughout the country abreast of the latest thought with regard to obstetrical management in all types of situations. And this does not mean merely the obstetricians; it means all types of physicians throughout the country who deal in any way with pregnancy—particularly the general practitioners. The question arises as to where the responsibility for such physician education lies. Is it with the teaching medical school, is it with the County Medical Society, or is it perhaps a public health function? I do not know the answer to that question, but I think it is one which we shall have to consider as we go along with our discussion; because education of the public in terms of preparation for pregnancy added to the best possible prenatal care can be relatively valueless if our physicians, all over the country, are not abreast of the latest obstetrical methods.

I might mention in this connection my own experience a couple of years ago when I was asked to take part in an annual "refresher" course tour through the state of Oregon, sponsored by the Bureau of Maternal Health of the State Department of Public

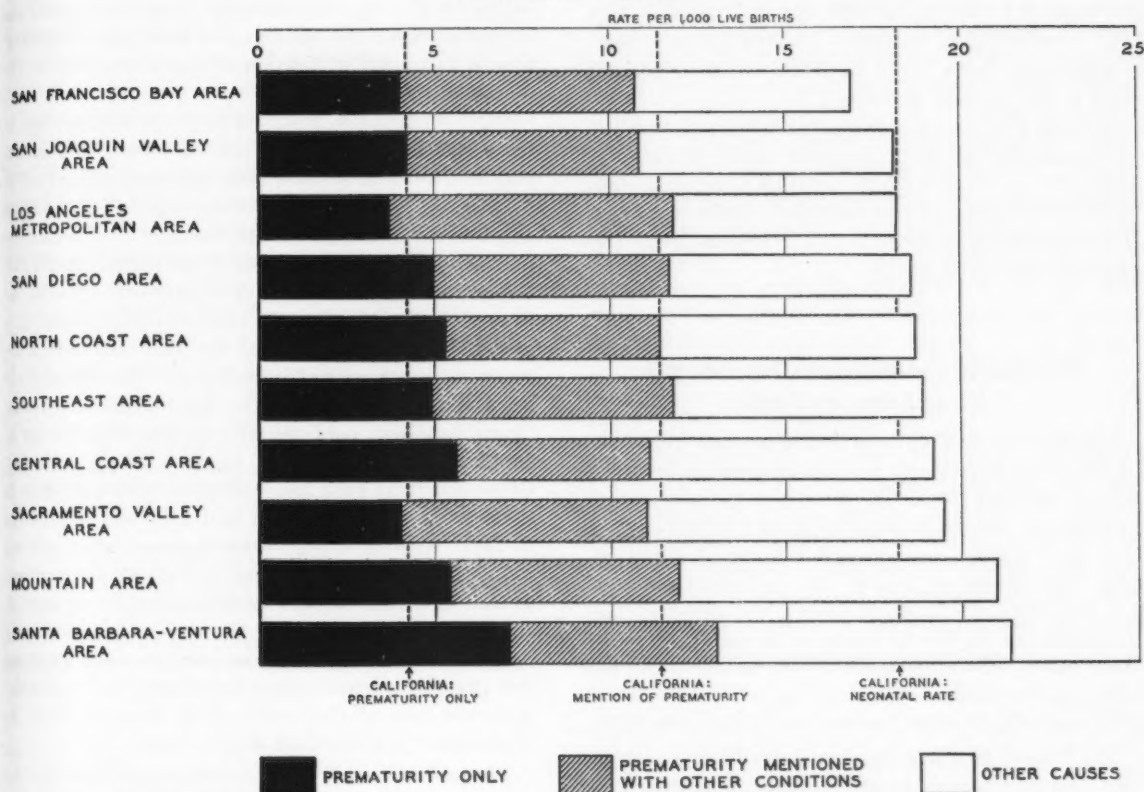
Health. Each year two or three obstetricians and pediatricians—and in the course of years they come from all over the country—are invited to take part in a very concentrated tour of five cities. In my own case this was through eastern Oregon, one city each day for five days. During the course of that time we met together with perhaps 200 practicing physicians in eastern Oregon to discuss the latest advances in maternal and child care and pediatric and obstetric methods. So in the state of Oregon postgraduate "refresher" education of physicians at large is at least to that degree a public health function. Whether this should or should not be the case throughout the country is open to question.

There also arises the question of supplying community facilities. This matter has already been discussed to some extent this morning, but I should like to mention it again a moment in connection with the statistics that Dr. Eastman presented on the causes of prematurity. For example, Miss McFeeley mentioned this morning the supplying of housekeeping services and facilities in certain obstetrical circumstances. Dr. Eastman has mentioned the possible role of fatigue and overwork in the production of premature delivery. Is the supplying of such facilities properly a public health function; is it a community function which should come from other sources; or will economic difficulties always get in the way of its satisfactory accomplishment? One thinks also in connection with obstetrical care of this sort of such things as the public health nursing service, which is of course well established, perhaps also of ambulance service, other types of transportation, in connection with making prenatal clinics more accessible to patients. These can be of tremendous aid, not only in carrying out prenatal care, but in the management of such complications of pregnancy as third trimester bleeding, heart disease, toxemia, and other diseases which play a role in the causation of premature delivery.

The final consideration, and one which always constitutes a knotty problem, is that of money! Under certain circumstances in complications of pregnancy the costs to any individual family can be astronomical. Take the patient hospitalized for third trimester bleeding whose management is accomplished by our present conservation regimen and who consequently has to spend perhaps several weeks in the hospital. The costs here mount tremendously; indeed they become very great even if the patient under such circumstances spends that amount of time carefully supervised and flat in bed at home. Where is the financial aid for this sort of prenatal care for the prevention of prematurity to come from?

PREMATURITY'S ROLE IN NEONATAL MORTALITY RATES

California Areas, 1951



The areas include the following counties:

SAN FRANCISCO BAY AREA: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma.

SAN JOAQUIN VALLEY AREA: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare.

LOS ANGELES METROPOLITAN AREA: Los Angeles, Orange.

SAN DIEGO AREA: San Diego.

NORTH COAST AREA: Del Norte, Humboldt, Lake, Mendocino.

SOUTHEAST AREA: Imperial, Riverside, San Bernardino.

CENTRAL COAST AREA: Monterey, San Benito, San Luis Obispo, Santa Cruz.

SACRAMENTO VALLEY AREA: Butte, Colusa, Glenn, Sacramento, Sutter, Tehama, Yolo, Yuba.

MOUNTAIN AREA: Alpine, Amador, Calaveras, El Dorado, Inyo, Lassen, Mariposa, Modoc, Mono, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou, Trinity, Tuolumne.

SANTA BARBARA-VENTURA AREA: Santa Barbara, Ventura.

The above chart shows the relative importance of prematurity in the total neonatal (under 28 days of age) mortality rate in each of the 10 areas of California in 1951. "Prematurity only" refers to prematurity unqualified or with mention of subsidiary condition (International List Numbers 774 and 776), "prematurity mentioned with other conditions" refers to prematurity reported with certain diseases of early infancy (International List Numbers 760-773).

These data by areas show variations in neonatal mortality rates and the proportion of neonatal deaths that have mention of prematurity as a causal factor. The differences between area rates are difficult to interpret. In reviewing data locally, certain limitations should be kept in mind: differences in reporting practices, varia-

tions in the proportion of deaths in which prematurity is not considered a factor, and wide variations from year to year where the numbers of births and neonatal deaths are small.

A comparison of the 1951 data with the 1950 data shows little change for the State as a whole. For example, prematurity was mentioned as a cause of death on 62.6 percent of the death certificates of infants dying within the first 28 days of life. For 1950, this proportion was 61.7 percent. "Prematurity only" was given as cause of death on 22.9 percent of the neonatal death certificates in 1951 and on 24.0 percent in 1950.

In California in 1949, a matched birth and neonatal death certificate study showed that on the basis of birth weight, 64 percent of the neonatal deaths were of pre-

mature babies (weighed 5 lbs. 8 ozs. or less at birth). That same year, 61 percent of the neonatal death certificates showed prematurity as a causal factor. This corresponds to the 62.6 percent for 1951 and indicates that "mention of prematurity" on the death certificate is a practical index to the mortality of premature infants in the neonatal period.

Data on 1950 neonatal mortality rates with mention of prematurity are given for each county in the Statistical Supplement to the Forty-third California Public Health Report and are available for 1951 on request from the Bureau of Records and Statistics, State Department of Public Health.

Flu-like Illnesses Seem Decreasing After January Peak

California's first wave of influenza and influenza-like illnesses, apparently reached its peak in the week ending January 24, 1953, according to information gathered by the State Department of Public Health's Bureau of Acute Communicable Diseases. A slight decrease has become evident by the week ending February 6th, although another wave could develop. The impression of decline in these acute respiratory diseases was verified by a special telephone survey of the Influenza Surveillance Group set up late in December, 1952, and which began functioning in January, 1953.

The Bureau of Acute Communicable Diseases organized this surveillance group in order to obtain from cases diagnosed as influenza, laboratory specimens including paired whole blood specimens for antibody testing and throat washings for viral isolation. The Influenza Surveillance Group consists of physicians in health departments, in private practice, and in industrial plants. Such collaborating physicians are located in the following eight counties: Alameda, Lassen, Los Angeles, Mendocino, San Diego, Shasta, Stanislaus, and Tulare. Laboratory analysis is made at the State Viral and Rickettsial Disease Laboratory in Berkeley except for those specimens from the city of Los Angeles, which are done at the Virus Laboratory of the Los Angeles City Health Department. So far, the program has been quite successful, with a total of 25 first blood specimens, 7 second blood specimens, and 14 throat washings having been sent in to the State Viral Laboratory in the first three weeks of the surveillance operation.

The State Viral Laboratory has reported 162 positive paired specimens out of the 358 paired specimens tested since the first of January. Antibodies against influenza A prime type have been found in the majority of these blood sera. This is the same type of virus

as that reported in large outbreaks in the East and in the Middle Western United States.

These laboratory tests are for the purpose of identification of the type of influenza virus present in the diagnosed cases. It is obvious that this type of information is not a real indication of the prevalence of the disease.

The prevalence of influenza in the population can be measured in many ways—one of which is common rumor. Two devices have been standard procedure in California: (1) cases or outbreaks reported to the State Department of Public Health through local health departments by means of the Confidential Morbidity Report, and (2) laboratory specimens submitted to the State Health Department Viral and Rickettsial Disease Laboratory. Because of the poor correlation between the occurrence of influenza-like illnesses and the reporting of the disease, the Influenza Surveillance Group has been used recently by the department to supplement the two usual channels of information. Group members have been consulted with reference to the prevalence of influenza and influenza-like illness in their respective population groups, using several indices including school and industrial absenteeism, as well as regular reporting. Some conflicting impressions result from contacting these units, but uniformly they state that it is of no great concern in their areas. For those who seem to have the most reliable data the peak was around the week ending January 24th. As of February 6th there is a slight decline.

This coincides with the regular reporting to the department by the Confidential Morbidity Reports when it is taken in to account that there is a time lag of about 10 days between the appearance of the disease and the receipt of the reports by the State Department of Public Health. Tabulation of the Confidential Morbidity Reports to the department for the month of January were as follows: week ending January 10th, 7 cases; week ending January 17th, 46 cases; week ending January 24th, 436 cases; week ending January 31st, 629 cases.

Health Officer Changes

On December 1, 1952, Placerville entered into contract with the El Dorado County Health Department for public health services. Angus A. McKinnon, M.D., is part-time health officer of El Dorado County. The former health officer of Placerville was Marvin D. Killian.

Effective January 1, 1953, Charles A. Groomes, M.D., became part-time health officer of Siskiyou County. Dr. Groomes is also county physician. He replaced Albert H. Newton, M.D., as part-time health officer.

Plea That Flu Statistic Be a Bit More Realistic

(The following is reprinted from the *Los Angeles Times* of February 2d. Dr. George M. Uhl, Los Angeles City Health Officer, target of this good-natured jibe, is in the same situation in regard to receiving reports of individual cases of "influenza" as are most of the local health officers and of the State Department of Public Health. The disparity between the number of cases reported and the actual prevalence of the influenza-like illnesses put most California health departments in the position of seeming to deny the existence of widespread illness. As a matter of fact, the mechanism set up in the Los Angeles City Health Department for establishing the prevalence of widespread illness is superior to that of most parts of the State and probably of the Nation.)

Greetings to you, Dr. Uhl!
What a man for keeping cool.
In an ivory tower you dwell
Far from city germs and smell,
Yet the rumor has seeped through—
Some of us are down with flu.

This you're willing to concede,
But you think there's little need
Anyone should get upset—
"There's no epidemic yet."

(Here I quote from George M. Uhl,
Not an easy man to fool.)
Dr. Uhl, there's news for you:
All L. A. has got the flu!

You say, "Only forty-nine"—
That accounts for friends of mine.
Are your children still in school?
Lonely, aren't they, Dr. Uhl?

Is your wife still hale and hearty?
Maybe planning a big party?
L. A. is no piker's town,
Here we do things up in brown.

George, we've got a full-scale plague—
Why beat the bush? Why be so vague?
Citizens, rise up in beds,
Lift your clogged and aching heads,
Hoist an arm, though it be stiff,
He'll appreciate us if
Everyone who has the flu'll
Give a sneeze for George M. Uhl.

—Paula C. Gilbert, Santa Monica,
L. A. Times, Feb. 2d.

Butte County Positions

The Butte County Health Department announces a change in the salary range for registered sanitarians. The present salary range is \$298 to \$370 a month. Either a car will be provided or a gas mileage allowance of 8 cents a mile will be given. All interested persons please contact Dr. Richard C. Murphy, Director of Public Health, Butte County Health Department, P. O. Box 1100, Chico.

Botulinus Antitoxin Deposits Set Up for Northern California

A limited supply of botulinus antitoxin for emergency use is now available in the Bay area for suspected cases of botulism which may occur in Northern California. Two depots have been set up, one in Berkeley by the State Department of Public Health and one in San Francisco through the courtesy of Ellis Sox, M.D., San Francisco Health Officer.

Last spring the State Department of Public Health called attention of local health officers to the shortage of currently dated botulinus antitoxin and suggested that the available outdated materials be used while waiting delivery of fresh stock from Los Angeles, the only depot in California at that time. In the interim the department has been in communication with Lederle Laboratories regarding the shortage of currently dated antitoxin and expressed concern over having the supply limited to the Lederle office in Los Angeles. As a result Lederle Laboratories have supplied the State Department of Public Health with 12 vials of outdated antitoxin and six vials of currently dated antitoxin for emergency distribution in Northern California (i.e., the area above, but not including Fresno County), and are making every attempt to produce a supply sufficient to alleviate the shortage.

The provision of these depots is to expedite the administration of the initial dose of antitoxin to suspected cases of botulism in Northern California and because the supply is limited, only four vials per suspected case can be supplied. Therefore, additional doses should be ordered from Los Angeles (Lederle Laboratories, DUNKIRK 2-1383) as soon as possible.

During normal working hours (Monday, Tuesday, Wednesday, Thursday, Friday from 8 a.m. to 5 p.m.) requests should be made to the Bureau of Acute Communicable Diseases—BERkeley 7-7203. All requests coming after normal working hours (evenings 5 p.m. to 8 a.m. and Saturdays, Sundays and holidays) should be made to the San Francisco depot, phone number HEMlock 1-2800.

Transportation of the antitoxin from the depot to the suspected case should be arranged before phoning in the request. In some instances bus or airlines might be used, in others the cooperation of the local police department or ambulance services may be obtained. Limited facilities are available to the State Department of Public Health for transportation, but it is requested that all local means of transportation be exhausted before requesting the use of these limited facilities. There will be no charge for the antitoxin but financial arrangements for transportation will have to be assumed by the recipients.

Emergency Sanitation Services Given Flood Disaster Counties

The Bureaus of Sanitary Engineering and of Food and Drug Inspection of the State Department of Public Health were called upon for emergency sanitation services during the flood crisis in Humboldt and Del Norte Counties in January. Upon request for assistance from the health officer of the Humboldt-Del Norte Health Department two sanitary engineers went to Eureka on Sunday, January 18th, and placed their services at the disposal of the local health officer. On Tuesday, January 20th, a food and drug inspector joined them. These department staff members worked with the local health authorities during the flood and part of the rehabilitation stage. Technical advice and assistance was given on matters concerning water supplies, sewage and garbage disposal, food and drug problems, and general sanitation.

Prior to January 15th, Del Norte County had a rainfall reading of almost 77 inches for the season and the Klamath River was already at flood stage. From January 15th to 18th almost 19 inches were added to the total rainfall with almost 10 inches falling in less than 24 hours. The Klamath River overflowed its banks on the morning of January 18th, going into the lowlands and through the Township of Klamath and surrounding area. The small community of Klamath Glen was the most severely destroyed with some of the houses and resort cabins washed down the river to the ocean six miles away. The situation was similar in Humboldt County with the rains augmented by the melting of four feet of snow in the mountains. Orick was the most heavily damaged town in that county.

When the State Department of Public Health personnel arrived both counties were isolated by highway blockage and water and sewage systems were inoperative. Power was cut off from 48 to 60 hours in some areas. All flooded communities were inspected for contamination of water supplies. Where conditions warranted, assistance was given to restore the facilities to safe operation. After the Governor declared an emergency in the area, the Bureau of Sanitary Engineering made available two of its hypochlorinators for emergency use in disinfecting public water supplies. One of the units was left at the Eureka office of the Humboldt-Del Norte County Health Department when the staff returned to their headquarters.

Review of Reported Communicable Disease Morbidity—January, 1953

Diseases With Incidence Exceeding the Five-year Median				
Diseases	Jan., 1953	Jan., 1952	Jan., 1951	5-year median
Amebiasis	40	43	59	32
German measles	569	496	412	412
Hepatitis, infectious	115	38	25	25
Influenza	1,160	113	88	107
Meningitis, meningococcal	60	60	39	39
Polioomyelitis	270	143	183	143
Salmonella infections	41	105	37	10
Streptococcal infections, resp., including scarlet fever	722	1,174	1,018	521

Diseases Below the Five-year Median				
Diseases	Jan., 1953	Jan., 1952	Jan., 1951	5-year median
Chickenpox	3,291	5,710	4,598	4,470
Diphtheria	4	21	29	43
Food poisoning	1	676	3	9
Measles	1,969	1,105	3,635	2,284
Mumps	3,143	3,215	2,145	3,215
Pertussis	251	459	256	409
Rabies, animal	1	7	9	20
Typhoid fever	4	19	7	9

Tuberculosis and the Venereal Diseases				
Venereal Diseases	Jan., 1953	Jan., 1952	Jan., 1951	5-year median
Syphilis	516	773	960	960
Gonococcal infections	1,438	1,575	1,750	1,750
Chancroid	28	40	41	1
Granuloma inguinale	2	2	-	1
Lymphogranuloma venereum	5	8	13	1
Tuberculosis (all forms)	828	817	818	1

¹ Median not calculated.

The inspector from the Bureau of Food and Drugs worked with the sanitarians of the local health department and visited every food and drug outlet in the flood area. During the entire survey full cooperation was received from the owners and operators of retail outlets that had suffered extensive damages. Voluntary condemnation and destruction orders were signed by the owners or operators of the premises. In Del Norte County a total of 14 outlets were inspected and almost 5,000 pounds of contaminated food products were destroyed. In Humboldt County the same procedure was carried out with a total of six outlets inspected and approximately 3,300 pounds destroyed. Instructions were given for decontamination of all salvageable material.

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